A NOTE ON THE MOOSE IN SWEDEN

by

Kai Curry-Lindahl

Nordiska Museet and Skansen, Stockholm

Professor Bourlière has asked me to give some information about *Alces alces* in Sweden. In the sequel I shall refer to this species as the Moose, because this American appellation seems to me to be much more adequate than the often confusing term English elk.

I do regret that there is no Scandinavian report on this species and its grazing habits at this technical meeting. It was the intention of the Rapporteur Général to include the Moose (Elk) among the series of papers in Theme 1; in fact, arrangements were made to obtain a report in this species, but unfortunately the author failed to deliver what he had promised.

The history of the distribution of the Moose in Sweden during the last 200 pears is rather dramatic.

In the middle of the XVIIIth century the Moose occured mainly in the central provinces (Svealand) of Sweden. Outside of this centre of distribution the species was very rare. At the beginning of the XIXth century the Moose was almost extinct in Sweden. Apparently, it was saved by total protection during the periods 1808 - 1817, 1826 - 1835 and 1850 - 1852. Since then hunting has been strictly regulated, a factor which has largely contributed to the increase of the species in recent times. Today our chief concern is to keep the Moose population within tolerable limits.

During the present century we have witnessed a tremendous range expansion of *Alces* over the whole of Sweden, with highest populations in Central Sweden. The marked increase in number over the last 20 years has been characterized by two features : (1) High local densities utilizing new habitats such as cultivated landscapes, with little regard for human settlement; and (2) the movement of the species into new areas, especially

Swedish Lapland, where formerly a distributional gap occured. These marshy habitats with an abundance of willows and other foods are ecologically superior mooselands and resemble the Canadian biotope of *Alces*. The species is now populating this entire habitat and becoming a common animal in Swedish Lapland. As a result, the general increase of the total Swedish population will continue, even with enforced local reduction in southern Sweden in order to avoid excessive forest damage.

In 1945 a moose census was made in Sweden indicating a total population of 46,995 individuals. During the following autumn 11,014 animals were killed during the hunting season, or 23.4 % of the estimated population. Since 1945 the yield has increased every year, reaching harvests of 20,000 animals yearly. In 1953 a new census indicated a total population of about 90,000 animals, and during the following autumn 25,446 individuals were killed, or 20.8 % of the estimated population. During 1959, 32,286 Moose were shot. This figure indicates an increase of the stock during the last six years, though less pronounced than between 1945 and 1953.

As mentioned above, the regulation of hunting has been an extremely important instrument in moose management. But the background of the amazing population increase of the species in recent times cannot be explained by this factor alone. There certainly are many factors involved. Not only are the innate dynamics of the species strong, but it shows a remarkable ability to adapt to new environments. The rapid transformation of the southern and central Swedish woodlands into cultivated lands over the last 60 years seems to have favoured the Moose ecologically. Lack of predators in these areas may have played a certain role but in my opinion such carnivores as wolves and bears have never been important predators of *Alces*. Climatological factors may also be involved.

The population dynamics of *A. alces* has a contemporary parallel in that of *Capreolus capreolus*, which, at present, is rapidly invading northern Sweden and has reached Swedish Lapland. In 1830 it was saved from extinction in Sweden by one private estate in the southermost part of the country, its only occurence in Scandinavia at that time !

In Swedish areas with dense Moose populations considerable damage is being done to young pines (*Pinus silvestris*). However, the staple foods of the Moose are the leaves and twigs of *Salix caprea* and other species of

willows, *Populus tremula* and *Sorbus aucuparia*. In wintertime it also feeds on the twigs of *Juniperus*.

In the management of the Moose in Sweden there has been a trend to spare the calves and to shoot their mothers, the result of a campaign for preserving the younger animals; even legislative action has been promoted to this end. This attitude is, in my opinion, a serious mistake, because it appears that calves which lose their mothers during their first aumumn are unable to care for their food requirements during the critical first winter. Moose orphans often become imperfectly developed animals, and in many areas of southern Sweden this feature has influenced the whole population structure in a negative way.

In addition to the above problem adult males are rarely permitted to live long enough to reach their maximum physical development. This last effect has, however, no genetic consequences, but it emphasizes the low average weight of the Moose harvest of southern Sweden in comparison to the harvest of northern Sweden, where adult male often reach spectacular maximum size of body and antlers.

Finally, I would like to say that we in Sweden are not so optimistic about the future of the Red deer as Dr. Darling is about this species in Scotland. Presently there are not more than 150 individuals living in southernmost Sweden plus a few animals which have been reintroduced in central Sweden.